WRESTLE WAR

SEGA®

Installation/Owner's Manual

by:

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The Federal Communication Commission requires the verification of game kits. This game kit will meet these requirements when installed in accordance with the instructions in this Manual and using only components and materials supplied with this kit.

201-004

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Introduction

SEGA ENTERPRISES, LTD., supported by its high electronic technology of Large Scale Integration, microprocessors, etc. and a wealth of experience, has for more than 30 years been supplying various innovative and popular game machines to the world market. This OWNER'S AND KIT INSTALLATION manual is intended to provide detailed comments together with all the neccessary information covering the operation and installation of electronic assemblies, electromechanical assemblies, control assemblies, and spare or replacement parts for the WRESTLE WAR coin operated game. This manual is intended for those who have knowledge of electricity and technical expertise in video games. Carefully read the enclosed information before starting the kit installation or troubleshooting procedures.

Handling and Installation Precautions

During installation:

1. Be sure to remove power plug when working on the machine.
2. Be sure all connections and harness routing are secure.
3. Make sure all grounding connections are secure and properly affixed.
4. Do not use any fuse that does not meet the specified rating.

Prevention of Counterfeiting and Conversion Labeling

To prevent counterfeit and unauthorized conversions, the following label is supplied with all authorized SEGA kit products. When handling such goods, be sure to locate and confirm the label. It is used to prevent illegal acts such as the unauthorized copying of the products and the printed circuit boards.

Precautions Concerning the Place of Installation

The WRESTLE WAR CONVERSION KIT is intended to be installed in an indoor game cabinet. Absolutely do not install it outdoors. When installed indoors the following places mentioned below should be avoided to ensure proper operation and usage:

- Places subject to rain or water leakage, or condensation due to humidity
- In the proximity of an indoor swimming pool and/or shower
- Places subject to direct sunlight
- Places subject to heat sources from heating units, hot air, etc.
- Vicinity of highly flammable/volatile chemicals or hazardous materials
- Sloped surfaces
- Vicinity of anti-disaster facilities such as fire exits and fire extinguishers
- Places subject to any type of violent impact
- Dusty environment

System Requirements

Power Supply:

- Input voltage 90 VAC to 135 VAC 60 Hz
- +5 volts at 6 amps
- +12 volts at 2 amps
- Overvoltage protected at +5.8 volts
- Current limit set at 8 amps

RFI Line Filter:

1. If a switching power supply is used:
   - Current rating of 6 amps
   - Frequency attenuation of the following:

.15 MHz	40db
.5 MHz	65db
1.0 MHz	65db
5.0 MHz	55db
10.0 MHz	50db
30.0 MHz	50db

2. If a linear power supply is used:
   - Current rating of 5 amps
   - Frequency attenuation of the following:

.15 MHz	6db
.5 MHz	19db
1.0 MHz	28db
5.0 MHz	42db
10.0 MHz	45db
30.0 MHz	50db

Miscellaneous:

Line Fuse:	4 amp 120 VAC
Speaker:	8 ohms 10 watt
On/Off Switch:	6 amp 120 VAC
Isolation Transformer:	115 VAC primary, 115 VAC secondary, 100 watts
Coin Door:	Dual coin acceptors
Coin Meter:	+5 Volt DC
Power Cord:	Three conductor with ground
Color Monitor:	

- Video input 1 volt to 5 volt peak-to-peak positive polarity
- Sync TTL negative polarity separate horizontal and vertical
- Horizontal frequency 15.750 KHz
- Vertical frequency 60 Hz
- Video bandwidth 12MHz or greater
- Horizontal mounted
- Recommended size 19 inch

Tools Required

- Drill
- Hole cutter 1-3/16"
- Phillips screw driver
- Flat blade screw driver
- Small flat blade screw driver
- Scissors
- Sand paper
- Paint
- X-acto knife
- Wood patch

Cabinet Preparation

1. Remove old PCB, and all existing game harnesses.
2. Remove and disassemble the control panel.
3. Remove any side decals, monitor bezel, and marquee.
4. Using sandpaper and/or paint thinner, clean and smooth the cabinet for paint preparation. Use wood patch to fill any knicks or flaws in the cabinet.
5. Paint cabinet if required.
6. Wipe down and vacuum cabinet as necessary.

NOTE: You are building a new game, not just changing an old one. A nice, clean, and new looking conversion not only earns better, but lasts longer.

Kit Component Verification

Verify each component with the kit list provided to assure your kit is complete. If any part is missing after the inventory is taken, please contact your distributor, and provide to them the following information:

1. Kit serial number
2. Part number and description of missing item/s
3. Date received

Kit List

Part Number	Quantity	Description
0002-0000	2	#6 x 3/8 P/h Phil Tek
0002-0001	4	#6 x 3/4 P/H Phil "AB" SMS
0312-0024	8	10-20 x 1 3/4 Carr/Bolt Black
0502-0024	8	10-20 Hexnut
0612-0024	8	10 Split Lock Washer
0692-0024	8	10 Flat Washer 1/2 OD
2112-0000	2	Wire Nut #18 x 2
2521-0004	1	Monitor Bezel
4201-0004	1	Manual Wrestle War
421-5801-90	1	License Seal Wrestle War
4210-7407-01	1	Wrestle War Switch Setting Sheet
4212-0001	1	(Kit) Serial # Sticker
4231-0020	1	Wrestle War Marquee Plex
4231-0021	2	Wrestle War Side Art
4231-0022	1	Wrestle War Control Panel Overlay
4231-0008	1	Control Panel Clear Plex
4231-0023	1	Wrestle War Label Sheet (See List) (1) Test, Service, Volume Sticker (1) Joy Stick Sticker (2) Punch Stickers (1) Play Inst Sticker (2) Kick Stickers (1) Start 1 Player Sticker (1) Start 2 Player Sticker (1) FCC Sticker (Kit)
4750-0049	1	Volume Control 100 Ohm 10 Watt
5090-5028	2	PB Spst Switch Momentary
5091-0001-01	2	Joy Stick 8 Way (Spring Type)
5091-0005-01	2	PB Spst Control Panel (Red)
5091-0005-02	2	PB Spst Control Panel (White)
5091-0005-03	2	PB Spst Control Panel (Blue)
6010-0043	1	Knob, 1/8" Shaft
833-6887-07	1	Wrestle War Game—PCB
9992-0000	6	4" Tie Wrap
KRO-1721-KT	1	Service Switch Bracket
JAM-0000	1	JAMMA HARNESS
S25-0000	1	Sega 2 JAMMA HARNESS
5091-0005-01	6	Pal Nut
5091-0005-02	6	Leaf Switch
5091-0005-03	6	Universal Adaptor

Installation Procedure

Monitor Bezel

1. Locate MONITOR BEZEL (2521-0004). Measure the size of existing monitor bezel or the required size to fit and cut cardboard monitor bezel to size.(see figure 1)

License Seal

2. Locate WRESTLE WAR LICENSE SEAL and place seal as shown of in figure 1. Install Monitor Bezel on game cabinet. Note: Verify that the License Seal will be visible when the bezel is installed on game cabinet.

Side Decal

3. Locate WRESTLE WAR SIDE ART (4231-0021). Install on the left and right side panels of the cabinet (see figure 1). Note: A mixture of slightly soapy water can be used on the cabinet to position the artwork as desired. A squeegy may be used to remove any wrinkles in the artwork if soapy water is used.

Marquee Plex

4. Locate WRESTLE WAR MAROUEE PLEX (4231-0020). Measure the size of existing marquee plex or required size to fit and trim the Altered Beast marquee plex to size. Install on cabinet. (see figure 1)

Control Panel

5. Locate WRESTLE WAR CONTROL PANEL OVERLAY (4231-0022). Measure the size required and cut the control panel overlay to fit the existing control panel.

6. Define the location of the player push buttons and joystick(s) on the control panel. (see figure 2)

7. Cut holes in control panel to locate buttons and joystick(s). See template for button and joystick. (see figure 3)

8. Install the "ONE PLAYER START" label and the "TWO PLAYER START" label on the control panel overlay. (see figure 2)

9. Install player control button labels, PUNCH and KICK on the control panel overlay. (see figure 2)

10. Install the JOYSTICK label(s) on the control panel overlay. (see figure 2)

11. Locate the CONTROL PANEL CLEAR PLEX (4231-0008) and cut holes into the plex to match the holes cut into the control panel. Then trim as required to protect the control panel overlay and labels. Note: this clear plex overlay can be used to protect unused holes in the control panel from player punctures. (see figure 2)

13. Install BLUE buttons (5091-0004-03) in the player 2 location for PUNCH and KICK. (see figure 2)

14. Install WHITE buttons (5091-0004-02) in 1 PLAYER START and 2 PLAYER START locations. (see figure 2)

NOTE: When buttons are securely placed and tightened in the control panel assembly, a small amount of clear RTV Silicone may be placed on two or three areas of the lock-nut to keep the switches from being unscrewed from the top of the panel. (see figure 3)

15. Locate the JOYSTICK(S) (5091-0001). This package consists of the following six components.

    a. Preassembled joystick(s) base assembly with microswitches
    b. E-ring
    c. Black knob & shaft
    d. 2" Dia. washer
    e. Actuator plastic
    f. Pivot cone

The final assembly of the joystick(s) must be performed after the joystick(s) base
assembly is mounted on the control panel. Locate the following:

a. 10-20 X 1 3/4 Carr/Bolt Black (0312-0024)	(8 ea)
b. 10-20 Hexnut (0502-0024)	(8 ea)
c. 10 Flat Washer 1/2" OD (0692-0024)	(8 ea)
d. 10 Split Lock Washer (0612-0024)	(8 ea)

Use the above components to secure the Joystick base assembly to the control panel. (see figure 2)

The final assembly of the joystick(s) is performed by:

a. Placing the 2" Dia. washer over the Black knob & shaft.
b. Install the Pivot cone on the shaft, note proper orientation.
c. Install the Black knob & shaft assembly through the joystick(s) base assembly on the control panel.
d. Install the Actuator micro/switch on the shaft, note proper orientation.
e. Install the E-ring on the shaft to secure the assembly.

Service Switch Assembly

16. Locate SERVICE SWITCH BRACKET (KR0-1721-KT) and install two PUSH BUTTON SPST SWITCH MOMENTARY (5090-5028) into bracket as shown in figure 4.

17. Locate VOLUME CONTROL 100 OHM 10 WATT (4750-0049) and install into service switch bracket as shown in figure 4.

18. Locate TEST, SERVICE, VOLUME STICKER and place on the service switch bracket as shown in figure 4.

19. Locate KNOB 1/8" SHAFT (6010-0043) and install on shaft of volume control 100 ohm 10 watt as shown in figure 4.

20. Install the Service Switch Assembly using 2 ea #6 x 3/8 P/H PHIL TEK screws (0002-0000) in the cabinet at either of the following locations (see figure 5):

- On top of the steel enclosure for the Cash Box, inside the coin door. **Note:** The TEK screws have a drill point and will drill through the steel enclosure.
- Inside to the left of the coin door, mounted to the wood cabinet.

Harness Installation

21. Locate the JAMMA HARNESS and install as shown in figure 5. Use the provided (6 ea) 4" TIE WRAP (9992-0000) to secure the harness.

22. Connect the harness to the POWER SUPPLY as follows: (see figure 6)

a. Twisted wires to +5 volt source. (Pins 3, 4, C, D of Jamma Harness)
b. Twisted wires to +12 volt source. (Pins 6, F of Jamma Harness)
c. Twisted wires to GND source. (Pins 1, 2, A, B of Jamma Harness)

23. Connect the harness to the COIN DOOR as follows: (see figure 7.)

a. Connect the wire's faston to coin chute 2 acceptor microswitch COMMON terminal. (Pin T of Jamma)
b. Connect the wire's faston to coin chute 1 acceptor microswitch COMMON terminal. (Pin 16 of Jamma)
c. Connect a wire's faston to coin chute 2 acceptor microswitch NORMALLY OPEN terminal. Use the faston that is nearest the harness break out. (GND from Pin 27,28, R, F)
d. Connect the next wire's faston to coin chute 1 coin acceptor microswitch NORMALLY OPEN terminal. (GND from Pin 27,28, R, F)
e. Connect the other two wire's faston to the two lamps on the coin door. (GND from Pin 27,28, R, F)
f. Connect the two wire's faston to the two lamps on the coin door. The wires supply +5 volts to the lamps and the black wires supply the return.

24. Connect the harness to the COIN METER by using two WIRE NUTS (2112-0000). (see figure 8) **Note:** Some coin meters have an internal diode.

25. Connect the harness to the CONTROL PANEL as follows:

    a. Route and connect the daisy chained wire to the terminal of the PLAYER PUSH BUTTONS and JOYSTICK as shown in figure 9.
    b. Connect the control panel harness wires as follows: (figure 10)

	JAMMA PIN #
TO PLAYER 1 JOYSTICK UP	18
TO PLAYER 1 JOYSTICK DOWN	19
TO PLAYER 1 JOYSTICK RIGHT	21
TO PLAYER 1 JOYSTICK LEFT	20
TO PLAYER 1 KICK	22 (Push 1)
TO PLAYER 1 PUNCH	24 (Push 3)
TO PLAYER 1 START	17
TO PLAYER 2 JOYSTICK DOWN	W
TO PLAYER 2 JOYSTICK UP	V
TO PLAYER 2 JOYSTICK RIGHT	Y
TO PLAYER 2 JOYSTICK LEFT	X
TO PLAYER 2 KICK	2 (Push 1)
TO PLAYER 2 PUNCH	b (Push 3)
TO PLAYER 2 START	U

27. Connect the routed speaker wires to the speaker. Check the routing for security.

CAUTION!!: Do not connect the Wrestle War PCB Direct to the Jamma Harness as permanent, severe damage will occur to the PCB.

Sega Interface Harness Installation

28. Locate Sega Interface Harness and connect by inserting the card edge into the JAMMA HARNESS matching arrows to assure proper orientation. (figure 13)

29. Connect the Sega Interface Harness to the SERVICE SWITCH ASSEMBLY as follows: (see figure 4.)

    a. Connect the two wires to a terminal of each (GND) PUSH BUTTON. Sega Harness Pin f.
    b. Connect the wires to the SERVICE SWITCH. Sega Harness Pin 23.
    c. Connect the wires to the TEST SWITCH. Sega Harness Pin 22.
    d. Connect the wires to the terminal of the VOLUME CONTROL that is nearest the center of the bracket. Sega Harness Pin b.
    e. Connect the wires that goes to the speaker to the center terminal of the VOLUME CONTROL. Jamma Sega Harness Pin L.
    f. Connect the wires that is routed to the 56 pin connector to the outer most terminal of the VOLUME CONTROL. Sega Harness 24.

Cabinet 115 VAC System Grounding

30. Locate the GROUND lead (green) of the 115 volt input power Line (see figure 12). This must be connected to all components of the game system. This is a safety requirement for the players' protection. This AC GROUND must be of #18 AWG wire or larger. (see figure 12 for the proper routing of the wire)

Cabinet System Checkout

31. Apply power to cabinet system and check for the following voltages. If any voltage is incorrect, remove power and correct problem before proceeding any further.

    a. +5 Volts on pins 3,4,C, and D of the 56 pin PCB connector. (Sega Interface Connector)
    b. +12 Volts on pins 5 and E of the 56 pin PCB connector.
    c. No voltage present on any other pins of the 56 pin PCB connector.

32. Check that the monitor has power. This can be accomplished by observing the glow of the filament inside the neck of the picture tube.

33. Check that the Marquee lamp has power.

34. Check that the system ON/OFF switch functions properly.

WARNING: PROCEED ONLY IF THE ABOVE CHECKS ARE CORRECT

Wrestle War Printed Circuit Board Installation

35. Locate the WRESTLE WAR GAME and install the logic PCB inside the cabinet (see figure 5). Use (4 ea) #6 x 3/4 P/H PHIL "AB" SMS (0002-0001) to secure the PCB through its' mounting feet.

36. Locate the WRESTLE WAR SWITCH SETTING SHEET. Place this sheet on the inside of the game so that it is visible when the back door is removed or opened. This will allow the DIP SWITCH OPTIONS to be handy when service or changes in options is required.

37. Connect the 56 pin connector of the Sega Interface Harness to the PCB with the label on the same side as the components on the PCB. The 56 pin connector is marked with "COMPONENT SIDE".

NOTE: The proper orientation of the connector (see figure 13). If not connected properly, the system will not function and damage can occur to the PCB.

Logic Board and Complete System Checkout

38. Apply power to the system and observe that the logic PCB functions. If a video picture is not present proceed to "IN CASE OF DIFFICULTY" portion of this manual. When corrected, return to this point and continue.

39. Press the TEST BUTTON to enter the test menu. Individual tests can be entered by pressing the start switch to select the test switch again to enter the test.

- **Exit:**
  (Press test when arrow lines with this to exit to normal game mode.)
- **Input test:**
  Tests all player inputs and shows current Dip Switch settings.
  (Dip Switches may be changed in this mode with power on).
- **Sound test:**
  Tests all sounds. Press start button to step thru all sounds
- **CRT test:**
  Displays color bar and grid size so monitor adjustment can be made for color, focus, size, etc.
- **Memory test:**
  Tests all main program Rom and Ram accessible by the main CPU.
- **Back-up RAM clear:**
  Enables erasure of all bookeeping information, high scores, etc.
- **Bookkeeping:**
  Shows all coin credit in data and displays high/low scores, etc.

40. Set up game options as shown in figure 14.

a. DIP SWITCH 1 on PCB sets up the number of coins per credit
b. DIP SWITCH 2 on PCB sets up the following:

Advertise Sound	- Set to ON	- 2 on
RD TIME	- Set to 120	- 3 off, 4 on
CONTINUE	- Set to ON	- 6 off
Game Difficulty	- Set to HARD	- 7 on, 8 off

41. Functionally test the game by:

a. VERIFY that coin drops register proper credit/s and the COIN METER OPERATES.
b. VERIFY that the proper number of lives is given for each CREDIT.
c. VERIFY that the JOYSTICK MOVES the player left, right, and down.
d. VERIFY that each PUNCH BUTTON functions.
e. VERIFY that each KICK BUTTON functions.

42. Locate the Kit SERIAL NUMBER STICKER and FCC STICKER. Install these stickers on the rear of the game cabinet. (see figure 1)

In Case of Difficulty

–Check A.C. line cord
–Check line fuse
–Check monitor brightness
–Check power switch and/or interlock switch
–Check all solder connections on line filter and transformer
–Check for proper orientation of the 56 pin PCB connector

–Check all PCB to monitor connections
–Check power supply voltage on PCB

–Check monitor brightness
–Check all PCB to monitor connections

–Monitor needs degaussing
–Check for proper wiring between PCB and monitor
–Check monitor adjustment and adjust if necessary

–Check monitor ground is properly connected to monitor
–Be certain sync inputs are properly connected to monitor
–Check horizontal hold adjustment

–Check horizontal and/or vertical hold adjustments
–Check for proper wiring of sync from PCB to monitor

–Check volume control potentiometer adjustment
–Check for +12 volts on edge connector of PCB
–Check wiring from PCB to speaker
–Check speaker for low resistance between the "+" and "–" tabs

–Check wiring to speaker for bad solder connections.
–Check sound with another speaker

–Check ground connection to switch/es
–Check wiring between PCB and switch/es for proper connection
–Check switch/es with an ohmeter to verify proper operation

–Check wiring between PCB and switches for proper orientation
–Check wiring for shorts between switch inputs

–Check wiring to coin meter
–Check that +5 volts is on "+" side of meter
–Verify a +5 volt meter is used

–Verify that a meter with a diode is used
–If no diode is built in meter a 1N4004 can be used across the meter.
Cathode to "+" side of meter and anode to "–" side of meter

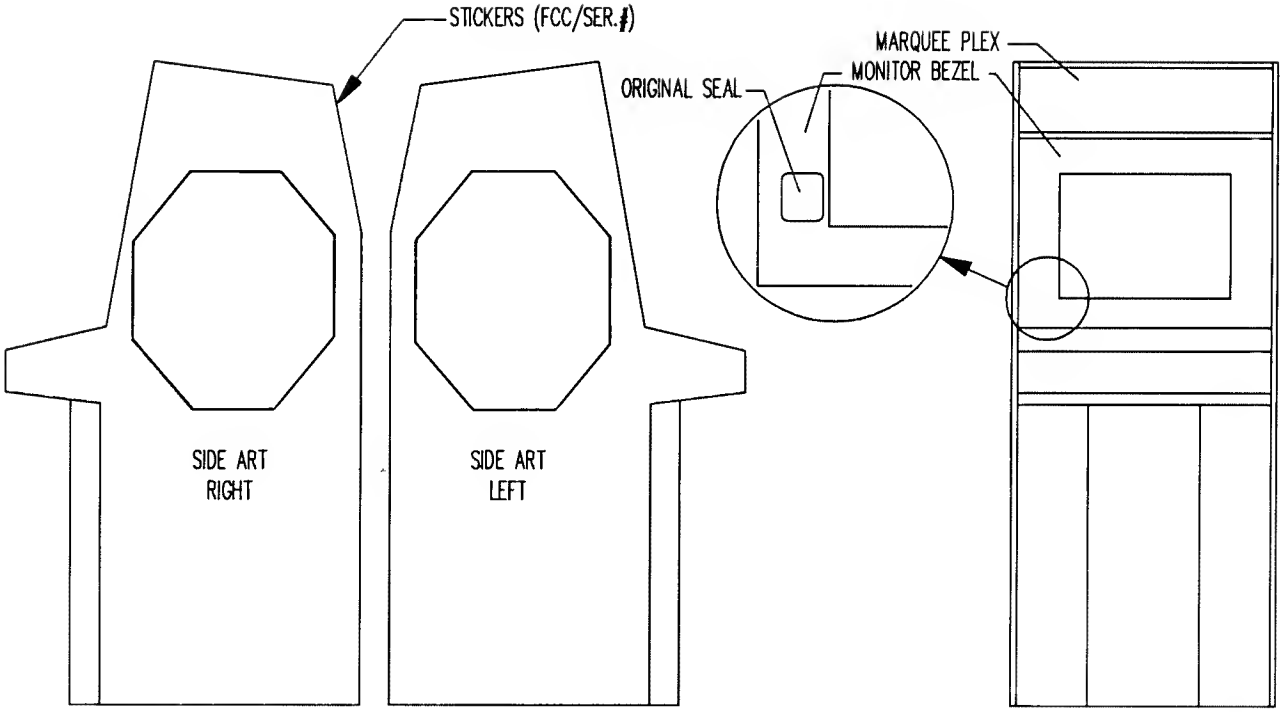
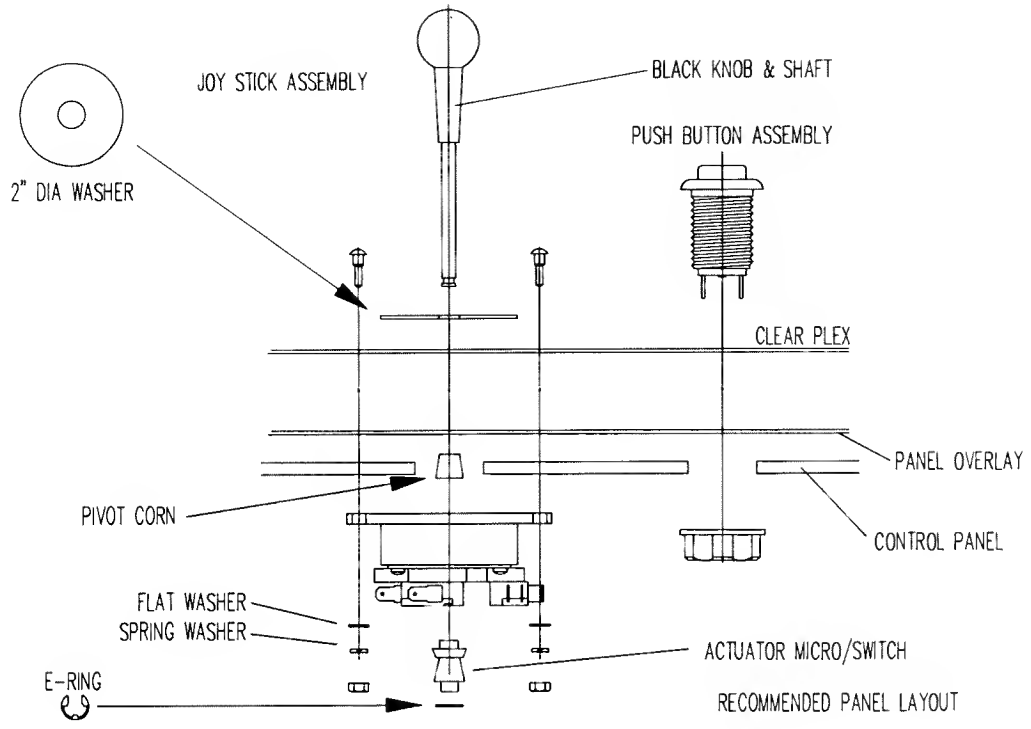
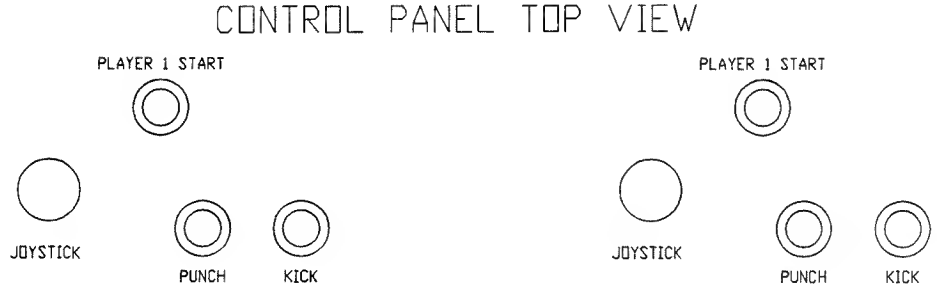

STICKERS (FCC/SER.#)
MARQUEE PLEX
MONITOR BEZEL
ORIGINAL SEAL
SIDE ART
RIGHT
SIDE ART
LEFT

Figure 1


JOY STICK ASSEMBLY
BLACK KNOB & SHAFT
PUSH BUTTON ASSEMBLY
2" DIA WASHER
CLEAR PLEX
PANEL OVERLAY
PIVOT CORN
CONTROL PANEL
FLAT WASHER
SPRING WASHER
ACTUATOR MICRO/SWITCH
E-RING
RECOMMENDED PANEL LAYOUT


CONTROL PANEL TOP VIEW
PLAYER 1 START
PLAYER 1 START
JOYSTICK
PUNCH
KICK
JOYSTICK
PUNCH
KICK

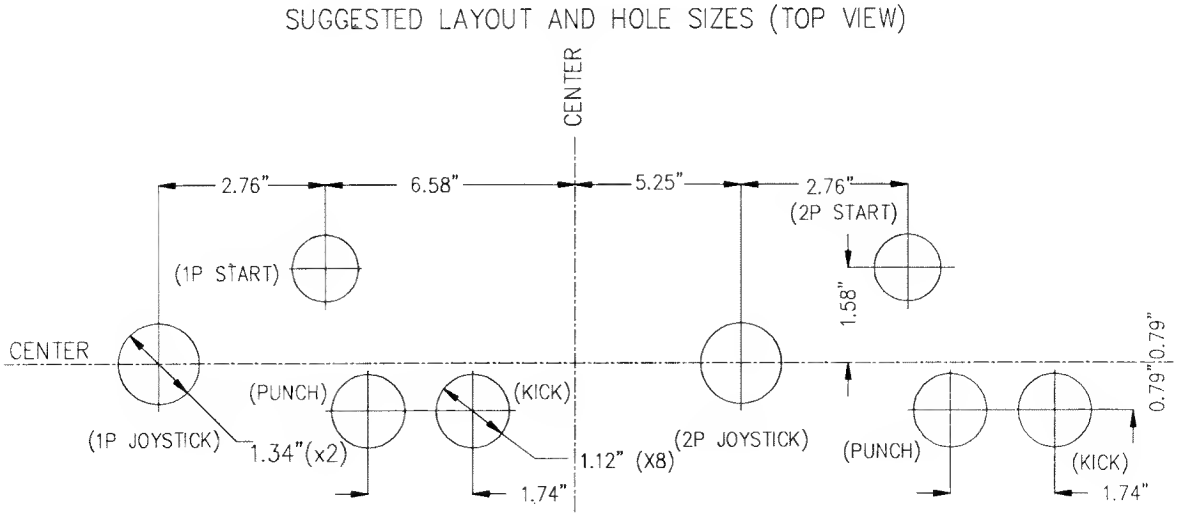

SUGGESTED LAYOUT AND HOLE SIZES (TOP VIEW)
CENTER
2.76"
6.58"
5.25"
2.76"
(2P START)
(1P START)
1.58"
CENTER
0.79"
0.79"
(PUNCH)
(KICK)
(1P JOYSTICK)
1.34"(x2)
1.12" (X8)
(2P JOYSTICK)
(PUNCH)
(KICK)
1.74"
1.74"

Figure 2

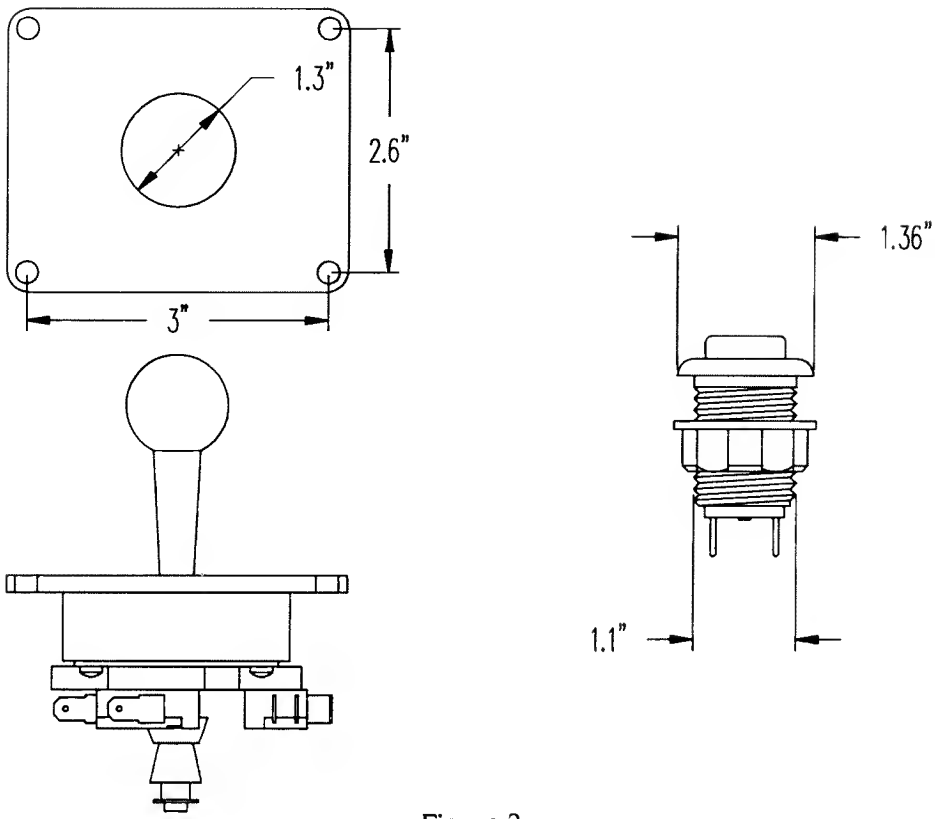


Figure 3

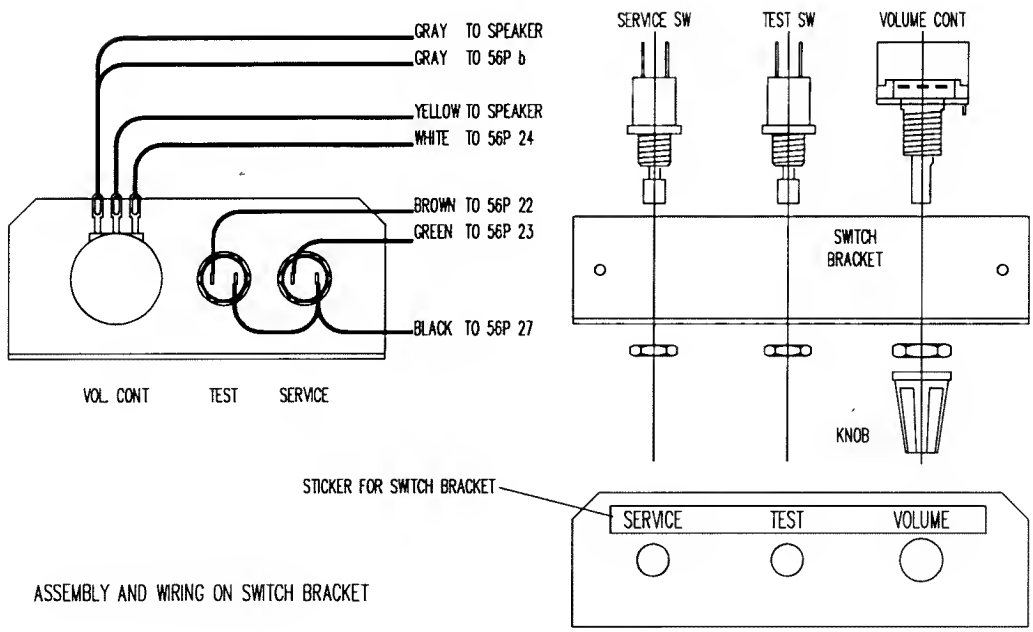
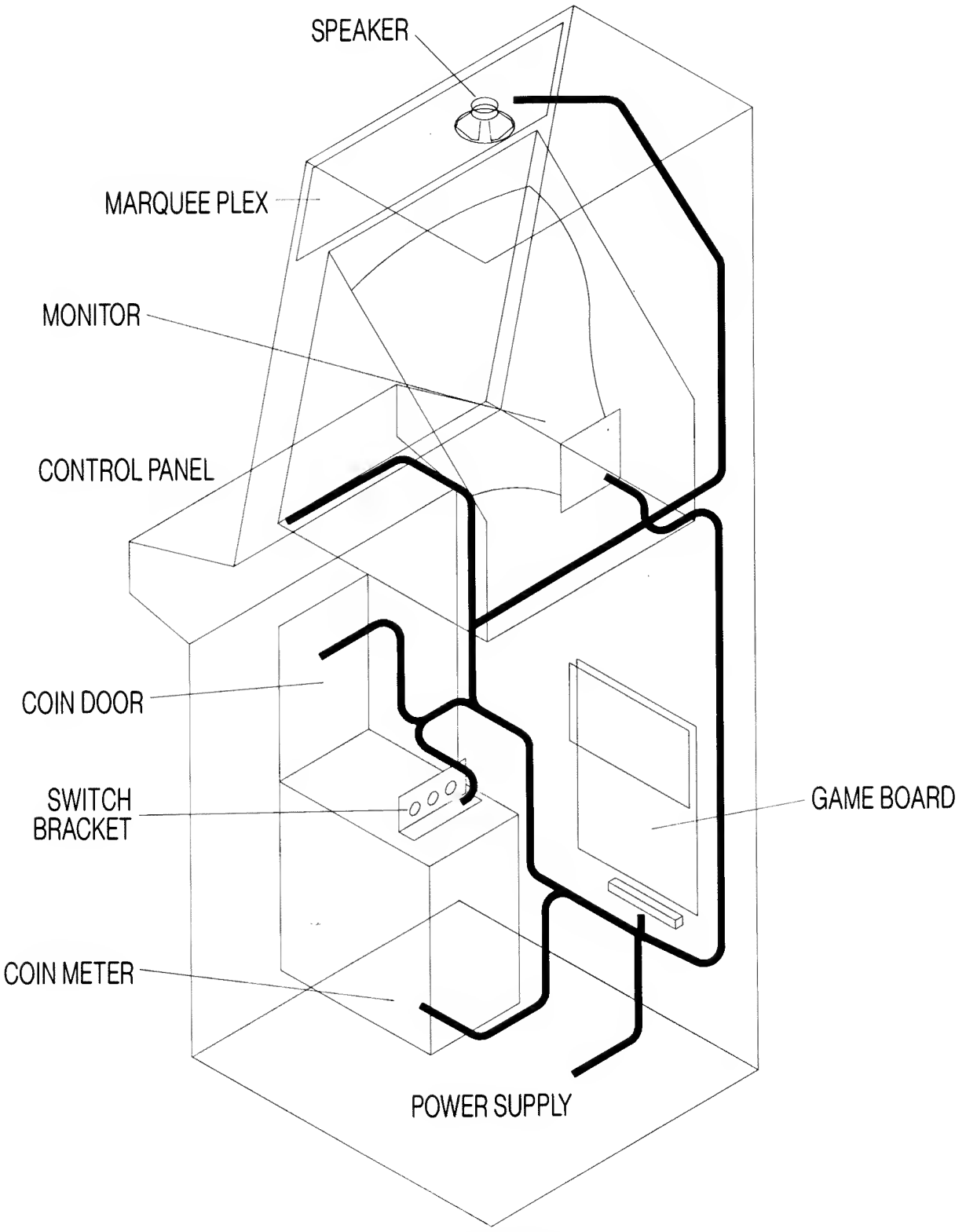


Figure 4



SUGGESTED HARNESS ROUTING

Figure 5

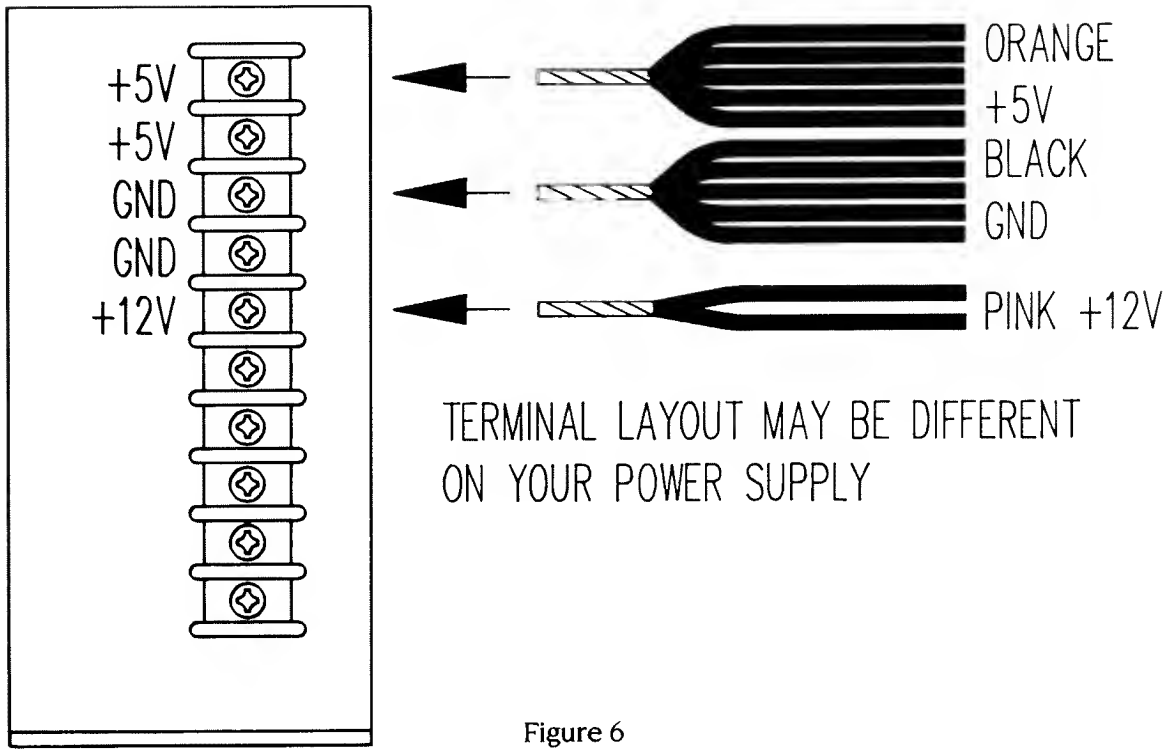


Figure 6

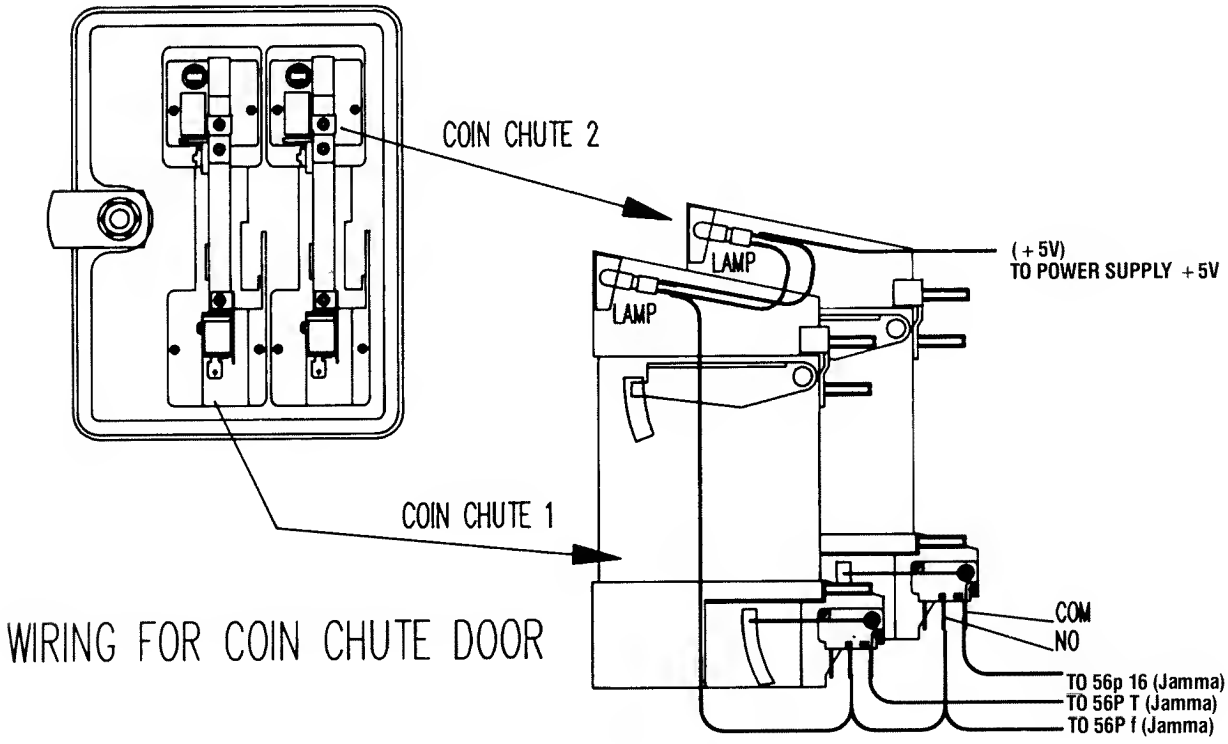


Figure 7

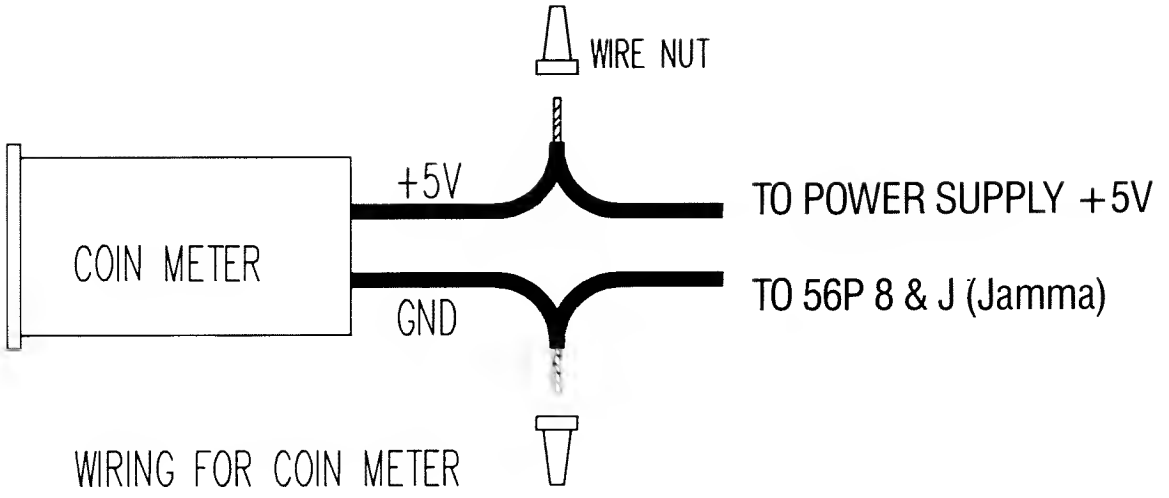


Figure 8

CONTROL PANEL REAR VIEW

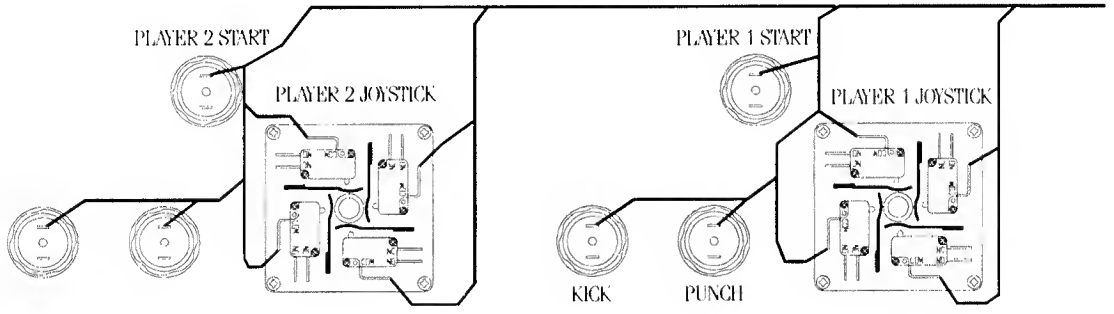


Figure 9

CONTROL PANEL REAR VIEW

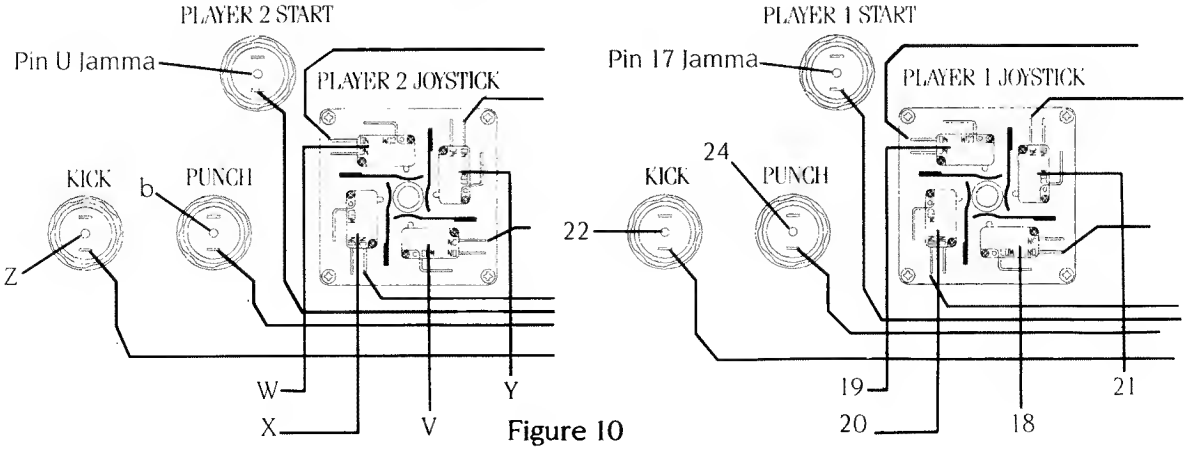


Figure 10

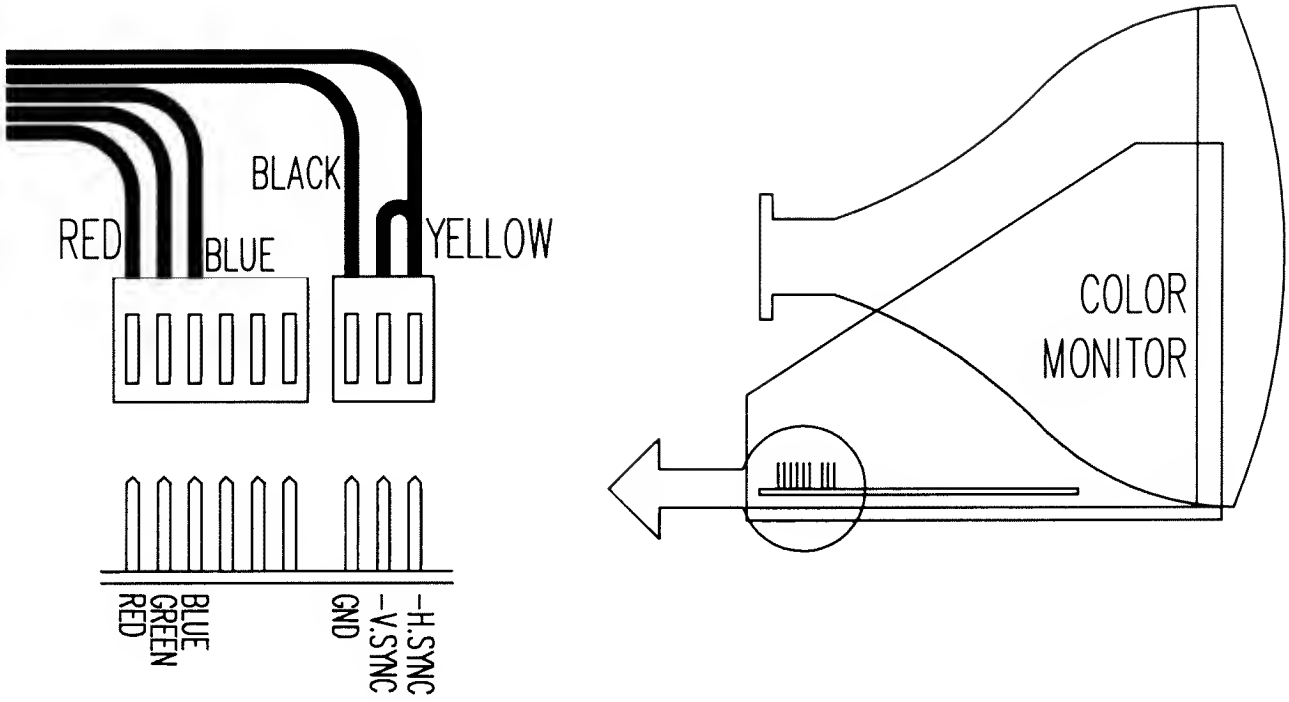


Figure 11

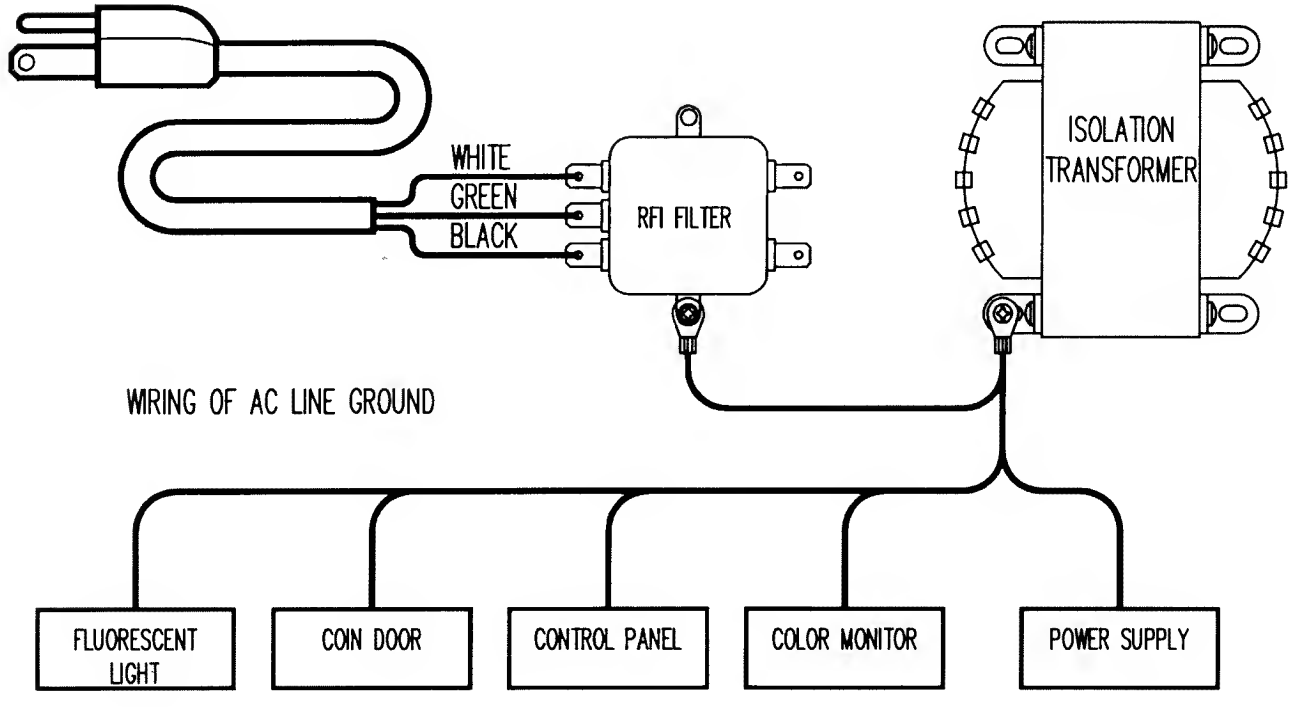


Figure 12

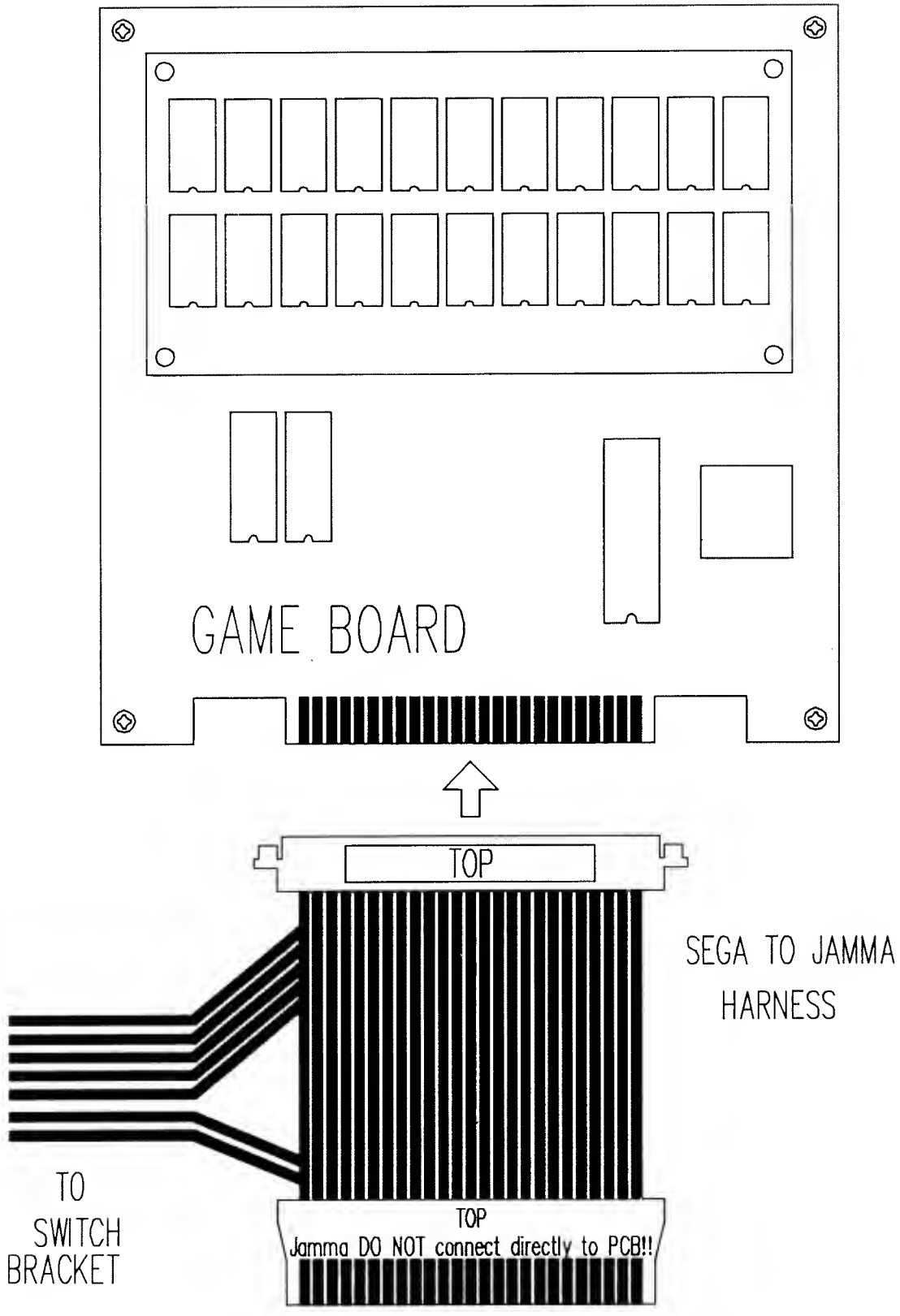

GAME BOARD
TOP
SEGA TO JAMMA
HARNESS
TO
SWITCH
BRACKET
TOP
Jamma DO NOT connect directly to PCB!!

Figure 13

PIN ASSIGNMENT-SEGA INTERFACE

COMPONENT SIDE			SOLDER SIDE
GND	1	A	GND
GND	2	B	GND
+5V	3	C	+5V
+5V	4	D	+5V
+12V	5	E	+12V
COIN METER 1	6	F	COIN METER 2
(NOT USED)	7	H	(NOT USED)
(NOT USED)	8	J	(NOT USED)
1P UPPER PUNCH	9	K	2P UPPER PUNCH
1P UPPER KICK	10	L	2P UPPER KICK
(NOT USED)	11	M	(NOT USED)
1P JOYSTICK DOWN	12	N	2P JOYSTICK DOWN
1P JOYSTICK UP	13	P	2P JOYSTICK UP
1P JOYSTICK RIGHT	14	R	2P JOYSTICK RIGHT
1P JOYSTICK LEFT	15	S	2P JOYSTICK LEFT
(NOT USED)	16	T	(NOT USED)
(NOT USED)	17	U	(NOT USED)
(NOT USED)	18	V	(NOT USED)
(NOT USED)	19	W	(NOT USED)
COIN 1	20	X	1P START
COIN 2	21	Y	2P START
TEST SW	22	Z	(NOT USED)
SERVICE SW	23	a	(NOT USED)
SPEAKER (+)	24	b	SPEAKER (−)
VIDEO RED	25	c	VIDEO GREEN
VIDEO BLUE	26	d	VIDEO SYNC
GND	27	e	GND
GND	28	I	GND

56P P:3.96 mm

MONITOR

VERTICAL

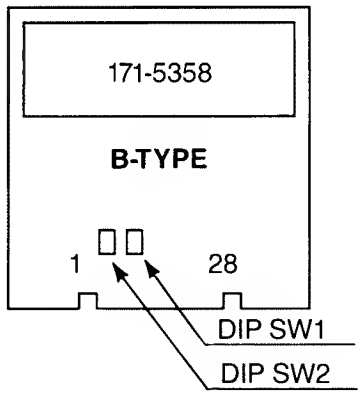
PIN ASSIGNMENT-JAMMA PIN-OUT

COMPONENT SIDE			SOLDER SIDE
GND	1	A	GND
GND	2	B	GND
+5V	3	C	+5V
+5V	4	D	+5V
−5V	5	E	−5V
+12V	6	F	+12V
(NOT USED)	7	H	(NOT USED)
COIN METER 1	8	J	COIN METER 2
COIN LOCKOUT 1	9	K	COIN LOCKOUT 2
SPEAKER (+)	10	L	SPEAKER (−)
AUDIO (+)	11	M	AUDIO (GND)
VIDEO RED	12	N	VIDEO GREEN
VIDEO BLUE	13	P	VIDEO SYNC
VIDEO GND	14	R	SERVICE
TEST	15	S	TILT
COIN 1	16	T	COIN 2
1P START	17	U	2P START
1P UP	18	V	2P UP
1P DOWN	19	W	2P DOWN
1P LEFT	20	X	2P LEFT
1P RIGHT	21	Y	2P RIGHT
1P PUSH 1	22	Z	2P PUSH 1
1P PUSH 2	23	a	2P PUSH 2
1P PUSH 3	24	b	2P PUSH 3
1P RESERVED	25	c	2P RESERVED
1P RESERVED	26	d	2P RESERVED
GND	27	e	GND
GND	28	f	GND

56P P:3.96 mm

COIN/CREDIT OPTION SWITCH SETTING — DIP SW #1

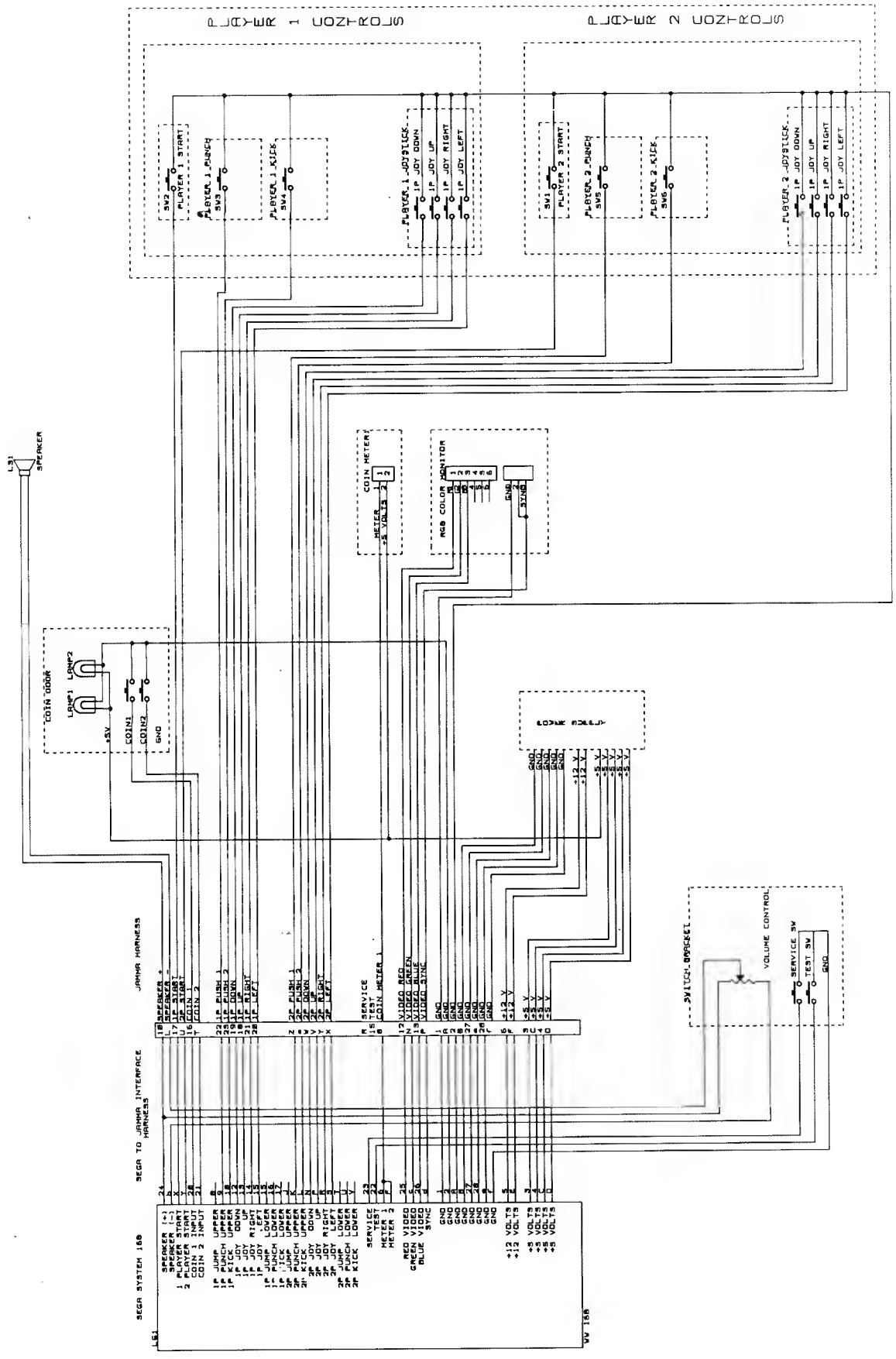
OPTION		1	2	3	4	5	6	7	8
1 COIN	1 CREDIT	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN	2 CREDITS	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
1 COIN	3 CREDITS	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
1 COIN	4 CREDITS	ON	ON	OFF	OFF	ON	ON	OFF	OFF
1 COIN	5 CREDITS	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
1 COIN	6 CREDITS	ON	OFF	ON	OFF	ON	OFF	ON	OFF
2 COINS	1 CREDIT	OFF	ON	ON	OFF	OFF	ON	ON	OFF
3 COINS	1 CREDIT	ON	ON	ON	OFF	ON	ON	ON	OFF
4 COINS	1 CREDIT	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
2 COINS	3 CREDITS	ON	OFF	OFF	ON	ON	OFF	OFF	ON
2 COINS 4 COINS 5 COINS 6 COINS	1 CREDIT 2 CREDITS 3 CREDITS 4 CREDITS	OFF	ON	OFF	ON	OFF	ON	OFF	ON
2 COINS 4 COINS	1 CREDIT 3 CREDITS	ON	ON	OFF	ON	ON	ON	OFF	ON
1 COIN 2 COINS 3 COINS 4 COINS 5 COINS	1 CREDIT 2 CREDITS 3 CREDITS 4 CREDITS 6 CREDITS	OFF	OFF	ON	ON	OFF	OFF	ON	ON
1 COIN 2 COINS 3 COINS 4 COINS	1 CREDIT 2 CREDITS 3 CREDITS 5 CREDITS	ON	OFF	ON	ON	ON	OFF	ON	ON
1 COIN 2 COINS	1 CREDIT 3 CREDITS	OFF	ON	ON	ON	OFF	ON	ON	ON
FREE PLAY		ON	ON	ON	ON	ON	ON	ON	ON
		COIN SW #1				COIN SW #2			



GAME OPTION SETTING — DIP SW #2

OPTION 1		1	2	3	4	5	6	7	8
NOT USED									
ADVERTISE SOUND	OFF		OFF						
	ON		ON						
R D TIME	110 sec			OFF	OFF				
	120 sec			OFF	ON				
	130 sec			ON	OFF				
	100 sec			ON	ON				
NOT USED									
CONTINUE NOT CONTINUE							OFF ON		
GAME DIFFICULTY	NORMAL							OFF	OFF
	EASY							OFF	ON
	HARD							ON	OFF
	HARDEST							ON	ON

Switch Setting Sheet



Schematic Design

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